CHAPTER XI: Overview of NCCAM

Achievements in the First 10 Years of NCAAM and Future Research Areas

Here are a few examples of things that I consider particular achievements of ours in our first decade. Putting together the process to do a 3,000 patient study and overseeing that well is actually very big undertaking. And so I am very proud of the quality of the studies we have established. But particularly so, because the products were used were ones which there was also not existing FDA regulatory process to assure that the products were well characterized and consistent. And NCCAM has led the way in establishing those criteria, and there are now a set of criteria called consort criteria for herbal products that set publication standards for how well characterized a product should be before papers on it are published. There are many papers published that study a botanical but don't tell you where it came from, don't even give you the Latin name of the plant, and don't meet appropriate scientific standards.

We've made important contributions to safety issues. And I wanted to tell you about this paper. This was a very nice study that was done by a career awardee who was at that point in just beginning investigator, Bob Saper at Harvard. And what he did in this study, was he did an Internet search for ayurvedic sites where you can purchase ayurvedic medications. And he found that there were approximately 600 medications for sale, took a random sample of those, and purchased and obtained 278. Then he arranged with colleagues to test all of those substances for lead, mercury and arsenic. And this is the summary of his results as far as lead is concerned. What you see there with 3 blue lines are 3 different regulatory standards. Plotted on the X axis, is the estimated daily lead ingestion if you took the product as you were told to take it on the label. And approximately 20% of the substances he tested exceeded one or other of the regulatory standards, and this is a very liberal regulatory standard, but even this most widely accepted regulatory standard was exceeded by many of these products. Black, arer products purchased in the US are red are products purchased in India. I think we are very familiar with lead poisoning, it's bad for your kidneys. And I think this is a substantial concern, especially if individuals took this for a long time. The FDA thought so too, and they issued this advisory after that. And one of the things I think you might be interested to hear is that the NIH is not in charge of regulation of safety issues. The FDA is. And we have to develop processes where we see the science that then contributes to the regulatory decisions, and that's where we see our role. We can't take on monitoring the country's dietary supplements. But we can also be very happy when a concern comes

out of science that then leads to regulatory decisions.

And these are just some of the areas that I think of as pretty interesting right now, where we have some research going on or are eager to see more research going on. There are a lot of nice and interesting small molecules in foods we eat that clearly affect biology, but we don't yet really understand what they do. If you're on a healthy high fruit diet, you are eating a fair amount of quercetin. You'll have measurable levels circulating of quercetin. A lot of quercetin in apples and plums. Quercetin, in some cultures, has some interesting effects. It's really worth knowing. What does a compound like that, that's in so much of our food and has no known toxicity that we know yet–what's it actually do?

Another one that's very interesting and very variable intake is cercumin. Cercumin is an important component of tumeric and cumin and a number of seasonings used widely in certain cuisines, although not in typical northern European cuisine. But cercumin seems to have some very strong anti-inflammatory effects. And there are a bunch of other polyphenols and flavonoids that also may help us understand this persistent correlation between the fruit and vegetable diet and health. Cocuten is a dietary supplement that's pretty widely used and cocuten levels fall when you are on statins and there is at least a very plausible biological argument, that cocuten might be a good prophylactic for the muscle aches that people get who take statins. The studies that have looked at cocuten myopathy with statins is also associated with acute renal failure, but this is a very rare event. So this has been the actual muscle breakdown, so this has been very hard to study. The 2 studies tried to examine this really didn't have enough cases to get a definitive answer. Even release of CPK for muscle is not all that common with statins. So this is an interesting idea, but one that would take a pretty large study to get a clear answer for.

A fair amount of work going on potential anti-inflammatory actions of omega-3s. One of the big problems in omega-3 literature and omega-3 research is a huge variation in how much people eat. And so the interventions may take place on top of a background noise that's as large as the intervention. The same problem comes up with soy. We have about 4 groups working on the potential of cranberry juice to affect urinary tract infections and this is a nice prophylactic mechanism if it works, partly because urinary tract infections are a substantial concern in pregnancy when we really want to avoid drugs, and cranberry juice might be, but I don't know. An interesting answer.

The other area that's very interesting right now are the issues of pre- and probiotics. I'm sure some of you have heard the interest in the microflora that live in our guts and there is some reason to think, that certainly in newborns, that the administration of probiotics may influence the colonization of the gut. Probiotics are considered by Cochrane and other systematic reviews, to be useful in the prophylaxis of necrotizing enterocolitis in newborns. And so this is particularly in premature babies. And this is an area that we are expecting to see some more work on.

And another area that's very interesting, nothing yet clear-cut, but there are many interesting active components in traditional Chinese herbal remedies. So the other half of what we do has to do with things that affect the mind and the body, and these CAM practices. And here I think we've also had a number of achievements so far. The methodology for studying things like meditation, acupuncture, and mind/body interventions, these are difficult problems, but we're seeing progress and a greater number of rigorous studies, including studies on the neuroscience and brain imaging, on what happens to your brain with either meditation or acupuncture. And we also think that having funding for this kind of research is bringing more attention to psychosocial support, which is one of the things that is a recurrent theme in peoples' search for alternative health practices. We are very interested in seeing more science being brought to what happens between practitioners and patients, and how to help all of us learn what are helpful ways to get people to lead healthier lives.

Here's an example of some research that is like that. This is a paper published by John Tilbert, based on a survey of placebo treatments, and he did a survey of general family practice docs, internists, and rheumatologists, and asked them a series of questions about whether they use placebos. A very sizable number did, maybe around about half. And this caused a very intense debate in medical literature, there were half a dozen letters to New York Times about this, some people thought it was terrible, some people thought that all docs did this, and maybe even should. But I think that the debate is an excellent thing because it's a tough problem, as everyone who takes care of patients knows.

Here are a few things we see very promising. Yoga and Tai Chi look very useful for balance and avoiding falls in the elderly. The mind/body interventions, as I mentioned, are showing interesting neuroscience. And meditation acupuncture, other mind/body practices look like they can really help

with a variety of kinds of symptom management, but most especially pain. So one theme in the way I'm thinking about all this is that symptoms really matter. And some of the benefits that people find in alternative practices have to do with symptom management, and that we should learn from that, figure out where that is most effective, and learn for all parts of the health systems to utilize that when it really will help. That is to say that we're after building evidence, and NCCAM's about evidence, as is the rest of the NIH. This isn't a pyramid I developed, you'll see it in a variety of forms in lots of places, but the basic biological understanding is the underpinning of everything we do, but that should lead to rigorous human studies, particularly double-blind trials when appropriate. And those then are subject to systematic reviews and guidelines.

In the area of back pain, I think this is really happening right now for complementary and alternative medicine. So these 3 recently published studies are examples. The lowest is a very careful study lead by Karen Sherman on yoga for chronic low back pain, a randomized controlled trial, careful time and attention and matching. The middle is a systematic review on what certain kinds of exercise do for people with chronic low back pain. And the top is a recent guideline for the American College of Physicians, and the American Pain Society, and one of the recommendations in this guideline is that one thing to consider in people with low back pain of more than 6 weeks duration is chiropractic massage or acupuncture may be useful adjuncts care. So we support research that covers all these areas. It isn't really a pipeline in the way much of modern science is with findings going from basic science all the way to real-world application, because a lot of these practices are already in the real world. I told you a little bit about some of the major blue circle trials, large RCTs that NCCAM has funded. An area that we're really trying very much to strengthen, and we think is very important, is knowing more about how these practices are used in the real world, how people decide, what the real safety and efficacy issues look like, and so this is an area we're very much planning to strengthen. We're also realizing that herbal trials, very much like pharmaceutical trials, need to be based on a good answer to the yellow circle, how does it work. With retrospection I think both the Echinacea and St. John's wort trials would have been stronger if there had been clearer ideas about a likely mechanism. We just completed a symposium, summarizing all of this.